Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1 – 53. (Canceled)

54. (Currently Amended) A method of inducing ~~a protective~~ an immune response against human immunodeficiency virus (HIV) or an HIV epitope in a [[human]] primate, the method comprising:

administering to the [[human]] primate a nucleic acid composition comprising (a) at least four sets of nucleic acid molecules encoding wild-type HIV gp120 envelope glycoproteins, wherein ~~each of~~ the sets of nucleic acid molecules ~~encodes an envelope glycoprotein of a different primary isolate including at least a clade A primary isolate, a clade B primary isolate, a clade C primary isolate,~~ encode glycoproteins from primary isolates B715, Ba-L, and Czm, and from a clade E primary isolate, and (b) a set of nucleic acid molecules encoding a wild-type HIV gag protein [[of a]] from a primary isolate ~~of clade C~~; and

thereafter administering to the [[human]] primate a protein composition comprising a plurality of sets of isolated wild-type HIV envelope glycoprotein molecules of each of the primary isolates in (a),

wherein the nucleic acid composition and the protein composition are administered in amounts sufficient to ~~elicit a protective~~ induce an immune response against ~~a current or future infection with~~ HIV or an HIV epitope in the [[human]] primate.

55. (Currently Amended) The method of claim 54, further comprising isolating immune cells from the [[human]] primate; and testing an immune response of the isolated immune cells in vitro.

56. (Canceled)

57. (Previously Presented) The method of claim 54, wherein the protein composition is administered between 4 and 8 weeks after the nucleic acid composition.

58. (Previously Presented) The method of claim 54, further comprising testing for a cell-mediated immune response.

59. (Previously Presented) The method of claim 54, further comprising testing for a humoral immune response.

60. (Previously Presented) The method of claim 59, wherein a neutralizing humoral response is tested.

61 – 80. (Canceled)

81. (Previously Presented) The method of claim 54, wherein a cell-mediated immune response is induced.

82. (Previously Presented) The method of claim 54, wherein a humoral immune response is induced.

83. (Previously Presented) The method of claim 82, wherein a neutralizing humoral immune response is induced.

84. (Previously Presented) The method of claim 54, wherein the nucleic acid molecules comprise DNA plasmids.

85 – 95. (Canceled)

96. (Previously Presented) The method of claim 54, wherein one or more of the sets of nucleic acid molecules comprises optimized codons.

97 – 119. (Canceled)

120. (Previously Presented) The method of claim 54, wherein the set of nucleic acid molecules encoding the gag protein comprises optimized codons.

121. (Previously Presented) The method of claim 54, wherein the protein composition is administered with an adjuvant.

122. (Previously Presented) The method of claim 121, wherein the adjuvant is QS-21.

123. (Canceled)

124. (New) The method of claim 54, wherein the clade E primary isolate is 93TH976.17.

125. (New) The method of claim 54, wherein the wild-type HIV gag protein is a gag protein of NL4-3.

126. (New) A method of inducing an immune response against human immunodeficiency virus (HIV) or an HIV epitope in a human, the method comprising:

administering to the human a nucleic acid composition comprising (a) at least four sets of nucleic acid molecules encoding wild-type HIV gp120 envelope glycoproteins, wherein the sets of nucleic acid molecules encode glycoproteins from primary isolates B715, Ba-L, and Czm, and

from a clade E primary isolate, and (b) a set of nucleic acid molecules encoding a wild-type HIV gag protein from a primary isolate; and

thereafter administering to the human a protein composition comprising a plurality of sets of isolated wild-type HIV envelope glycoprotein molecules of each of the primary isolates in (a),

wherein the nucleic acid composition and the protein composition are administered in amounts sufficient to induce an immune response against HIV or an HIV epitope in the human.

127. (New) The method of claim 126, wherein the nucleic acid composition further comprises a set of nucleic acid molecules encoding gp120 envelope glycoprotein of a primary isolate from clade A, and the protein composition further comprises a set of isolated envelope glycoprotein molecules of a primary isolate from clade A.

128. (New) The method of claim 127, wherein the clade A primary isolate is 92UG037.8.

129. (New) The method of claim 126, wherein the clade E primary isolate is 93TH976.17.

130. (New) The method of claim 126, wherein the wild-type HIV gag protein is a gag protein of a Czm isolate.

131. (New) The method of claim 126, further comprising isolating immune cells from the human; and testing an immune response of the isolated immune cells in vitro.

132. (New) The method of claim 126, wherein the protein composition is administered between 4 and 8 weeks after the nucleic acid composition.

133. (New) The method of claim 126, further comprising testing for a cell-mediated immune response.

134. (New) The method of claim 126, further comprising testing for a humoral immune response.

135. (New) The method of claim 134, wherein a neutralizing humoral response is tested.

136. (New) The method of claim 126, wherein a cell-mediated immune response is induced.

137. (New) The method of claim 126, wherein a humoral immune response is induced.

138. (New) The method of claim 137, wherein a neutralizing humoral immune response is induced.

139. (New) The method of claim 126, wherein the nucleic acid molecules comprise DNA plasmids.

140. (New) The method of claim 126, wherein one or more of the sets of nucleic acid molecules comprises optimized codons.

141. (New) The method of claim 126, wherein the set of nucleic acid molecules encoding the gag protein comprises optimized codons.

142. (New) The method of claim 126, wherein the protein composition is administered with an adjuvant.

143. (New) The method of claim 142, wherein the adjuvant is QS-21.